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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,737	10/29/2003	Hirotsuna Miura	9319P-000584	6350
27572	7590	06/29/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			DO, AN H	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2853	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,737	MIURA, HIROTSUNA	
	Examiner	Art Unit	
	An H. Do	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-16,18-27 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) 2-6,8-10,21-27 and 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,11-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Response filed on 23 March 2006 has been acknowledged.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 11-16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al (US 6,364,459).

Sharma et al disclose in Figures 1A-12 the following claimed features:

Regarding claims 1 and 11, a droplet ejecting device (printhead 10) comprising: an ejector (10) that is adapted to eject a liquid stored in a pressure chamber (45) from an ejecting nozzle (20) by applying pressure to the pressure chamber (45); an ejection timing detector (Figure 3 shows surface tension of liquid column versus time) that is adapted to detect a start timing at which a liquid column starts being ejected from the ejecting nozzle (20); a droplet separator (Figure 6, element 115) that is adapted to give, the liquid column, an energy that separates the liquid column 60 or 80) from the liquid stored in the pressure chamber (45); and a controller (column 5, lines 50-52) that is adapted to control the droplet separator to give an energy at a timing when a predetermined time period has elapsed since the start timing detected by the ejection timing detector.

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Regarding claim 12, wherein said energy is optical energy (Figure 1A, elements 70 and 75).

Regarding claim 13, wherein said optical energy is coherent-light energy (Figure 1A, elements 70 and 75).

Regarding claim 14, wherein the optical energy comprises a plurality of light beams (77) traveling different directions (Figures 10A-11B).

Regarding claim 15, wherein at least two light beams (77) traveling in opposite directions (Figures 11A and 11B).

Regarding claim 16, wherein said energy is thermal energy (by heater 40, column 5, lines 8-20).

Regarding claim 18, wherein, in said droplet formation assisting step, a longer period is set as said predetermined time period where a volume of liquid to be ejected is larger (Figures 8 and 9).

Regarding claim 19, wherein said ejection timing detecting step includes: emitting light (77) from a light emitter (240) onto the liquid column (Figures 11a and 11B); and receiving, by a photo receiver (240).

Regarding claim 20, including the step of increasing the energy of light (77) emitted by the light emitter (240) (Figures 11A and 11B).

Response to Arguments

3. Applicant's arguments with respect to claims 1, 11-16 and 18-20 have been considered but are moot in view of the new ground(s) of rejection. The newly found reference of Sharma et al (US 6,364,459) discloses the claimed invention as shown above.

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Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AD
June 23, 2006



An H. Do
Primary Examiner
Art Unit 2853